

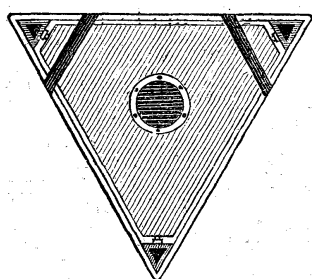
If other observations should confirm those of Mr. Burton we shall be in possession of proof, not only that the zodiacal light consists of matter which reflects the Sun's light, but that—

- (1) That matter exists in particles so small that their diameters are comparable with the wave-lengths of light; or
- (2) It consists of matter capable of giving specular reflection.

*On a Contrivance for protecting the Observer when a Reflecting-Telescope of large size is used in the open air.* By J. Browning, Esq.

It is generally admitted that reflecting-telescopes of large aperture perform most satisfactorily when they are used in the open air; the currents caused by convection, when the instrument is protected, through the slit of the dome of the observatory, being very prejudicial to good definition. But it is, of course, very desirable that the observer should be protected from winds and cold, particularly when measuring or drawing. I have contrived what I prefer to term "an observing-box," which I think will be found useful, inasmuch as it will afford complete protection to the observer under all circumstances.

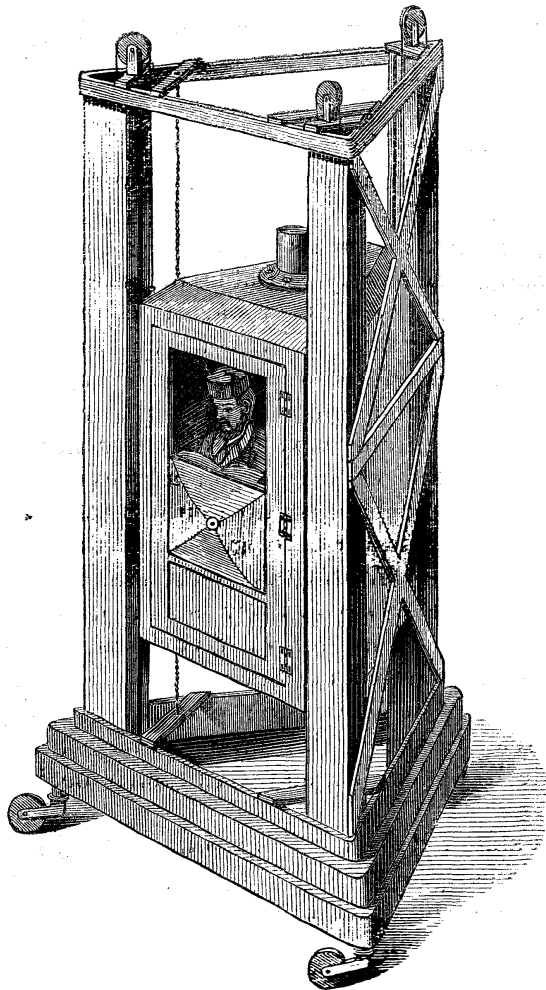
The diagram which I shall now describe shows the principal details of this contrivance; but I have prepared a carefully executed model of the contrivance, so as to be able to exhibit the action to the members of the Society. In the diagram, A, A, A represent three triangular pillars, which are hollow. These are attached to B and C, two strong triangles, framed of quarterings.



The observing-box D, which is also triangular, fits loosely between the three upright pillars, and runs in grooves, placed on the sides which face inwards. The weight of the observing-box is supported by three ropes, which run over the pillars P, P, P, attached to A, A, A. These are carried down the hollow pillars, and weights, which collectively must be heavier than the

box and the observer, are suspended from them. In this manner the weight of the box is counterbalanced. A door in one side of the box enables the observer to enter when the box is near the ground. On the lower ledge of the opening in this door, at a convenient height, a desk slope is placed; this can be lowered on hinges, or raised, and kept in position by a turning bracket in the usual way. The observer sits in an ordinary chair, as it has been found more comfortable than any seat attached to the box. Two strong cords attached to bars running across the triangles A and B, are carried through small circular holes in the top and bottom of the observing-box, one on each side of the observer. To raise or lower himself, the observer has only to take hold of

these, and if his weight is pretty accurately counterbalanced, a very slight exertion of force will enable him to ascend and descend readily to any height he may desire. In the portion of this apparatus which I have completed, I have found that a force of seven pounds was quite sufficient for this purpose. By having the weights, as I have stated, heavier than the box and the observer, and counterbalancing the box by superfluous weights on the inside, the box may be used by any person who is heavier or lighter than the observer for whom it was constructed. Ventilators with gauze wire, and sliding shutters which may be



opened or shut at the will of the observer, are placed on each side of him; as also a Miller's smoke-top, as a ventilator in the roof of the box. In particularly inclement weather, a cloth or India-rubber head may be attached to the framework of the door. This need have only a small circular opening, in which may be sewed a strong elastic band. On springing this over the eyepiece of the telescope, the observer will be protected from the weather. The same contrivance may also be used for the complete exclusion of all light. A foot-warmer filled with boiling

water, placed beneath the seat of the chair, or beneath the observer's feet, would enable him to heat the inside of the box to a temperature many degrees above that of the surrounding atmosphere, without impairing the performance of his telescope. Without the hood, and with all the ventilators open, the contrivances can also be used advantageously for solar observations, for protecting the observer from the heat and glare of the Sun. The whole of the scaffolding in which the box moves runs upon three castors.

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*Note on the Misuse of a Common Symbol.*

By Capt. William Noble.

"In order," says Mill in his *System of Logic*, "that we may possess a language perfectly suitable for the investigation and expression of general truths, there are two principal and several minor requisites. The first is that every general name should have a meaning steadily fixed and precisely determined."

As this canon obviously includes a sign or symbol under the logical term "name," I am anxious to enter my protest against the misapplication of a very common abbreviation. I refer to the mark ". Now there can be no doubt that this legitimately signifies seconds *of arc*; but, to go no further back than the January number of the *Monthly Notices*, I find at the bottom of p. 67 that Mr. Prince's Observatory is stated to be "24" E. of Greenwich;" while, as a matter of fact it is 24 seconds *of time* to the East of that Meridian, and not 1.6 seconds, as would appear from the mode of expression employed. Well, two pages further on I read of Dr. Robinson observing the eclipse with a "7" achromatic"! which, I assume, can only be intended for a 7 *inch* one.

As matters stand, it is anything but clear that Dr. Robinson did not view the eclipse with an achromatic subtending an angle of 7 seconds of arc, or that the Uckfield Observatory is not 24 inches East of Greenwich.

If the authors of papers would only invariably write "sec." for seconds of time, " for seconds of arc, and "in." for inches, all ambiguity would be avoided.